

Serial No.10/692,973
HP Docket No: 200308874-1

IN THE CLAIMS

1. (Currently Amended) A method for correcting web deformation during a roll-to-roll process comprising:

initiating a roll-to-roll process involving a flexible web substrate;
detecting web deformation in the flexible web substrate during the roll-to-roll process; and

dynamically correcting the flexible web substrate based on the detected web deformation wherein dynamically correcting the flexible web substrate comprises utilizing controllable mechanical components to correct the flexible web substrate based on the detected web deformation wherein the controllable mechanical components comprise spherical nips.

2. (Previously Amended) The method of claim 1 wherein detecting web deformation in the flexible web substrate includes:

utilizing optical markings on the flexible web substrate to detect the web deformation;

comparing the detected web deformation with a desired deformation;

generating an error signal based on the comparison; and

generating a correction signal to be utilized to dynamically correct the flexible web substrate.

Cancel claim 3.

4. (Currently Amended) The method of claim 3 1 wherein the controllable mechanical components include steerable disks.

Cancel claim 5.

6. (Currently Amended) The method of claim 5 1 wherein each spherical nip includes a spring loaded counter roller.

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7. (Currently Amended) The method of claim 3 1 wherein the controllable mechanical components include mechanical cross-rollers.

8. (Currently Amended) A system for correcting web deformation during a roll-to-roll process comprising:

means for initiating a roll-to-roll process involving a flexible web substrate;

means for detecting web deformation in the flexible web substrate during the roll-to-roll process; and

means for utilizing controllable mechanical components wherein the controllable mechanical components comprise spherical nips to dynamically ~~correcting~~ correct the flexible web substrate based on the detected web deformation.

9. (Previously amended) The system of claim 8 wherein the means for detecting web deformation in the flexible web substrate includes:

means for utilizing optical markings on the flexible web substrate to detect the deformation;

means for comparing the detected web deformation with a desired deformation;

means for generating an error signal based on the comparison; and

means for generating a correction signal to be utilized to dynamically correct the flexible web substrate.

Cancel claim 10.

11. (Currently Amended) The system of claim ~~10~~ 8 wherein the controllable mechanical components include steerable disks.

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Cancel claim 12.

13. (Currently Amended) The system of claim ~~12~~ 8 wherein each spherical nip includes a spring loaded counter roller.

14. (Currently Amended) The system of claim ~~10~~ 8 wherein the controllable mechanical components include mechanical cross-rollers.

15. (Currently Amended) A roll-to-roll processing system comprising:
a web rolling mechanism;
a flexible web substrate coupled to the web rolling mechanism;
a plurality of sensors configured to dynamically detect deformation in the flexible web substrate;
at least one controllable mechanical component coupled to the flexible web substrate wherein the at least one controllable mechanical component comprises a spherical nip; and
a computer system coupled to the plurality of sensors and the at least one controllable mechanical component wherein the computer system includes logic for detecting web deformation in the flexible web substrate; and
dynamically correcting the flexible web substrate based on the detected deformation.

16. (Previously Amended) The system of claim 15 wherein the logic for detecting deformations in the flexible web substrate includes logic for:
utilizing optical markings on the flexible web substrate to detect the deformation;
comparing the detected web deformation with a desired deformation;
generating an error signal based on the comparison; and
generating a correction signal to be utilized to dynamically correct the flexible web substrate.

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17. (Previously Amended) The system of claim 15 wherein the logic for dynamically correcting the flexible web substrate comprises logic for:
utilizing the at least one controllable mechanical component to correct the flexible web substrate based on the detected web deformation.

18. (Original) The system of claim 17 wherein the at least one controllable mechanical component includes steerable disks.

Cancel claim 19.

20. (Currently Amended) The system of claim 19 15 wherein ~~each~~ the spherical nip includes a spring loaded counter roller.

21. (Original) The system of claim 17 wherein the at least one controllable mechanical component includes mechanical cross-rollers.

22. (Currently Amended) A computer program product for correcting web deformation during a roll-to-roll process wherein the computer program product includes a computer usable medium having computer readable program means for causing a computer to perform the steps of:

initiating a roll-to-roll process involving a flexible web substrate;
detecting web deformation in the flexible web substrate during the roll-to-roll process; and

dynamically correcting the flexible web substrate based on the detected web deformation wherein dynamically correcting the flexible web substrate comprises utilizing controllable mechanical components to correct the flexible web substrate based on the detected web deformation wherein the controllable mechanical components comprise spherical nips.

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23. (Previously Amended) The computer program product of claim 22 wherein web detecting deformation in the flexible web substrate includes:

- utilizing optical markings on the flexible web substrate to detect the deformation;
- comparing the detected web deformation with a desired deformation;
- generating an error signal based on the comparison; and
- generating a correction signal to be utilized to dynamically correct the flexible web substrate.

Cancel claim 24.

25. (Currently Amended) A method for correcting web deformation during a roll-to-roll process comprising:

- utilizing optical markings on a flexible web substrate to detect the deformation in the flexible substrate;

- comparing the detected deformation with a desired deformation;

- generating an error signal based on the comparison; and

- generating a correction signal to be utilized to dynamically correct the flexible web substrate; and

- dynamically correcting the flexible web substrate based on the correction signal wherein dynamically correcting the flexible web substrate comprises utilizing controllable mechanical components to correct the flexible web substrate based on the detected web deformation wherein the controllable mechanical components comprise spherical nips.

Cancel claim 26.

27. (Currently Amended) The method of claim 26 25 wherein the controllable mechanical components include steerable disks.

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Cancel claim 28.

29. (Currently Amended) The method of claim ~~28~~ 25 wherein each spherical nip includes a spring loaded counter roller.

30. (Previously added) A method for correcting web deformation during a roll-to-roll process comprising:

initiating a roll-to-roll process involving a flexible web substrate;

detecting web deformation in the flexible web substrate during the roll-to-roll process; and

utilizing controllable mechanical components to correct the flexible web substrate based on the detected web deformation wherein the controllable mechanical components include spherical nips wherein each spherical nip includes a spring loaded counter roller.